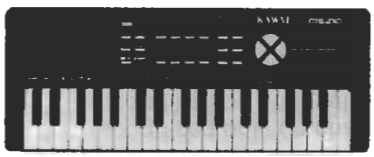
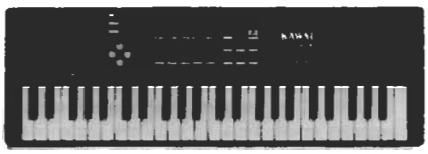
KAWAI MS210/MS510/MS710 Owner's Manual

MS210



MS510



MS710

IMPORTANT

This Manual contains instructions for three closely related, yet different models: the MS210, MS510, and MS710.
Notations after the headings and subheadings give the applicable model numbers. Headings without such notations apply to all three models.

HANDLING

- This instrument contains precision-engineered components that may be irreparably damaged if the unit is exposed to direct sunlight, high temperature, excessive humidity, dust, rough handling, and other hazards.
- Be careful not to allow paper clips, pins, coins, and other metallic objects to fall between the keys into the instrument. These type of objects can short-circuit the electronic components inside.
- This instruments contains no user-serviceable parts. Do not attempt to disassemble or modify internal components. Tampering not only voids the warranty, but also can cause short circuits, electrical shocks, and other electrical problems hazardous both to the instrument and to those using it.

■ Warnings

- This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, it can cause interference to radio communications. The rules with which it must comply afford reasonable protection against interference when used in most locations. However, there can be no guarantee that such interference will not occur in a particular installation. If this equipment does cause interference to radio or the related equipment of and on, the user is encouraged to try correct the interference by one or more of the following measures:
  - reorient the receiving antenna.
  - move the receiver away from the instrument.
  - plug the instrument into a different outlet so that it and receiver are on different branch circuits.
  - consult the dealer or a qualified service personnel.

■ This instrument complies with the limits for a class B digital apparatus, pursuant to the Radio Interference Regulations, C.R.C., c.1374.

(3) Use the TONE SELECT switch Ⓒ to select the secondary tone (SPRINGS).
Pressing a single note then produces a mixture of the STRINGS and PIANO tones. Chords use the primary tone (PIANO) for the lower notes and both tones for the highest note.

Procedure for MS210

(1) Use the TONE SELECT switch Ⓐ to select the primary tone (PIANO).
(2) While holding switch Ⓐ, use switch Ⓒ to select the secondary tone (STRINGS). This secondary tone will be added to the highest note played on the keyboard.

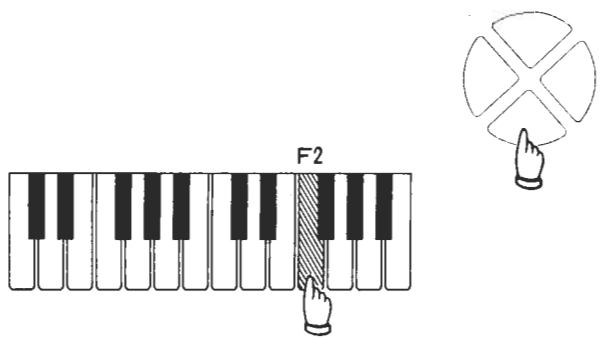
NOTE: On MS210, any tone in a given column (eg. above switch A) can be combined with any tone in a different column. Tones within the same column cannot be combined using Top Note Dual.

⑮ SOUND SELECTABLE PADS (Models MS210 and MS710 only)

The percussion pads allow you to add drum solos to the rhythm and automatic accompaniment. This function allows you to assign different percussion sounds to the percussion pads.

Example: Assigning LOW CONGA to a pad

(1) Move the LOWER MODE SELECT switch ③ to its DRUM & PAD SELECT position.
(2) Hold down one of the blue percussion PADS and press the key (F2) assigned to the percussion instrument (LOW CONGA).



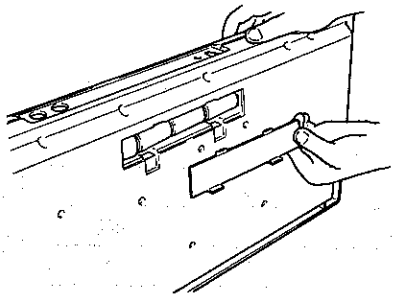
⑯ DEMO
This switch starts and stops a built-in performance that demonstrates the impressive sounds of the instrument.

POWER SUPPLY

This instrument runs on both batteries and regular household current.

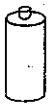
■ Battery Operation

Insert six dry cells into the compartment under the instrument.



Size "AA" (MS210/MS510)

Size "C" (MS710)



Notes:

- Make sure that the terminals all point in the same direction and in the direction indicated on the bottom of the battery compartment.
- If the volume fades or there are sound quality problems during battery operation, it is time to replace the batteries.
- Replace the batteries as a set. Never mix batteries of different ages or different types.
- Do not leave batteries inside the instrument during storage or long periods of disuse.

■ AC Operation

An AC adaptor (Model PS-121, PS-123 or PS-092 (only in U.S.)) is also available.

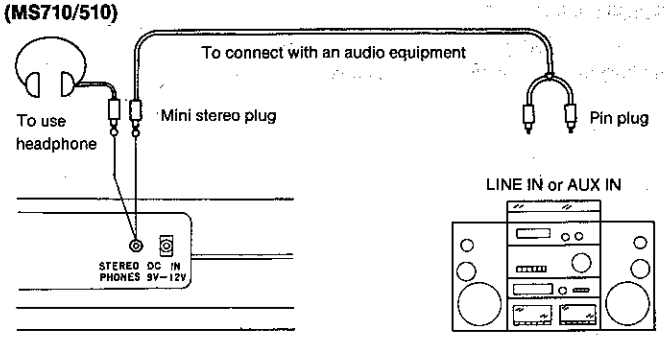
Notes:

- Make sure that the voltage rating listed on the label of the adaptor matches that of the power supply.
- When you connect adaptor with the instrument, be sure that power switch is off.

■ CONNECTIONS

Connection to a stereo, radio-cassette combination, or other type of audio equipment requires a special cable or adaptor with a mini stereo plug on one end and two RCA plugs on the other. (MS210/Mini mono plug and one RCA jacks) These cables or adaptors are available from most sales outlets handling audio equipment and accessories.
Connecting the MS710 to other MIDI instruments requires standard MIDI cables available at most music stores which carry electronic instruments.

(MS710/510)



SPECIFICATIONS

	MS710	MS510	MS210
Keys	49 Mid	49 Mid	37 Mid
Tones	24	20	16
Rhythm patterns	24	20	16
TOP NOTE DUAL	576	400	192
Effects	VIBRATO, STEREO CHORUS, PITCH BEND		
Percussion pads	YES	NO	YES
Rhythm controls	START/STOP, SYNCHRO/FILL IN, INTRO/ENDING		
Synthesizer parameters	WAVE1, WAVE2, ATTACK, DECAY, LEVEL		
Recorder controls	REC/STOP, PLAY/STOP		
Other ON/OFF switches	DEMO, ONE FINGER AD-LIB, TOP NOTE DUAL		
Built-in speaker(s)	10 cm × 2	8 cm × 2	8 cm × 1
Connectors	PHONES (mini jack), DC IN (9-12V)		
	MIDI IN/OUT		
Dimensions (W × D × H mm)	653 × 232 × 77	642 × 211 × 70	596 × 199 × 52
Weight (kg)	2.4	2.1	1.5
Batteries (included)	Six size "C"	Six size "AA"	Six size "AA"

1. NAMES OF PARTS AND BASIC OPERATION (All Models)

①POWER switch

②MASTER VOLUME
This controls the total output level.

③LOWER MODE SELECT
This three-position (OFF/AUTO/DRUM) switch controls the lower section of the keyboard. (See overleaf.)

④TONE SELECT
Pressing these switches lets you cycle through the available tones. Models MS510 and MS710 have LEDs that indicate the current selection.

⑤RHYTHM SELECT
These switches select the different rhythms. Models MS510 and MS710 have LEDs that indicate the current rhythm selected.

Rhythm & Automatic Accompaniment Section

⑥START/STOP
This switch starts and stops the rhythm or automatic accompaniment.

⑦SYNCHRO/FILL IN
This switch synchronizes the start of the rhythm or automatic accompaniment with your first touch on the auto-accompaniment selection of the keyboard. If the rhythm is playing, this switch becomes a "fill-in" switch which inserts a brief fill in to the rhythm pattern.

⑧INTRO/ENDING
Pressing this switch adds an introduction or ending to the rhythm pattern. Pressing the SYNCHRO/FILL IN switch ⑦ for intros will synchronize the start of this bar with your first touch on the auto-accompaniment section of the keyboard.

⑨TEMPO
These switches control the tempo of the rhythm pattern or automatic accompaniment. The left switch (–) decreases the tempo; the right one (+) rhythm pattern. The indicator next to the tempo switches flashes on every beat. (MS710/510)

⑩SYNTHESIZER (Model MS710 only)
See overleaf.

⑪RECORDER (Model MS710 only)
See overleaf.

⑫ONE FINGER AD-LIB
This switch activates the ONE FINGER AD-LIB function. ONE FINGER AD-LIB is on when the corresponding LED indicator is lit. (See overleaf.)

⑬EFFECTS Section (Models MS510 and MS710 only)

- **VIBRATO**
  This ON/OFF switch controls the vibrato effect for use with melody tones.
- **STEREO CHORUS**
  This ON/OFF switch controls the stereo chorus effect for use with melody tones.
- **PITCH BEND**
  Holding down one of these switches temporarily changes the pitch of any melody tone. The left switch lowers the pitch (BEND DOWN); the right one raises it (BEND UP).

⑭TOP NOTE DUAL (Models MS510 and MS710 only)
This ON/OFF switch activates the TOP NOTE DUAL function. (See description and procedure below.)

■ TOP NOTE DUAL

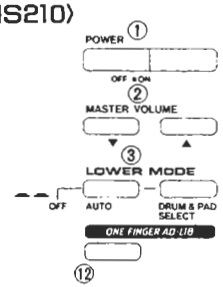
This function allows you to add a second tone to the highest note played on the keyboard.

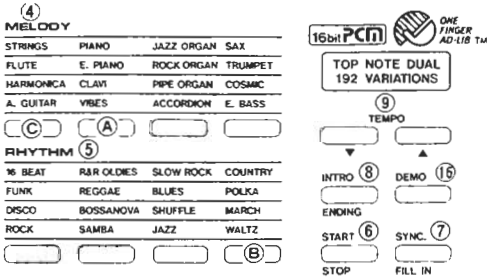
Example: Adding STRINGS to PIANO

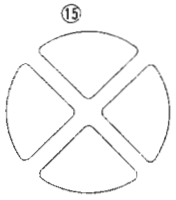
(1) Use the TONE SELECT switch Ⓐ primary tone (PIANO)

FRONT VIEW

⟨MS210⟩

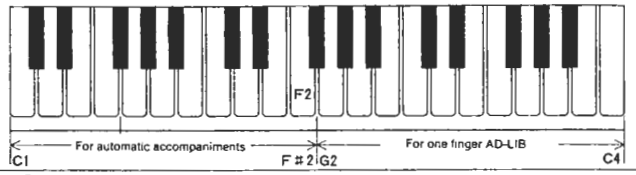



④ MELODY
STRINGS PIANO JAZZ ORGAN SAX
FLUTE E. PIANO ROCK ORGAN TRUMPET
HARMONICA CLAVI PIPE ORGAN COSMIC
A. GUITAR VIBES ACCORDION E. BASS
Ⓒ Ⓐ
⑤ RHYTHM
16 BEAT R&R OLDIES SLOW ROCK COUNTRY
FUNK REGGAE BLUES POLKA
DISCO BOSSANOVA SHUFFLE MARCH
ROCK SAMBA JAZZ WALTZ
Ⓑ

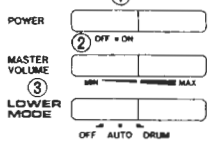


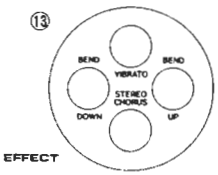
KAWAI PERSONAL KEYBOARD **MS210**

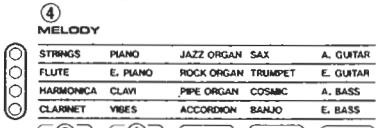
SOUND SELECTABLE PADS

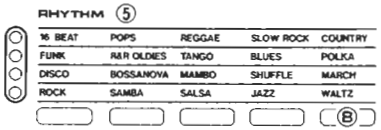


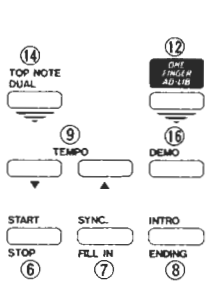
⟨MS510⟩






④ MELODY
STRINGS PIANO JAZZ ORGAN SAX A. GUITAR
FLUTE E. PIANO ROCK ORGAN TRUMPET E. GUITAR
HARMONICA CLAVI PIPE ORGAN COSMIC A. BASS
CLARINET VIBES ACCORDION BANJO E. BASS
Ⓒ Ⓐ


⑤ RHYTHM
16 BEAT POPS REGGAE SLOW ROCK COUNTRY
FUNK R&R OLDIES TANGO BLUES POLKA
DISCO BOSSANOVA MAMBO SHUFFLE MARCH
ROCK SAMBA SALSA JAZZ WALTZ
Ⓑ



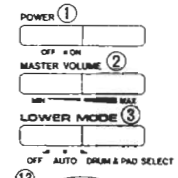
ONE FINGER AD-LIB TM

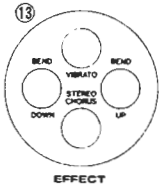
KAWAI
PERSONAL KEYBOARD
MS510

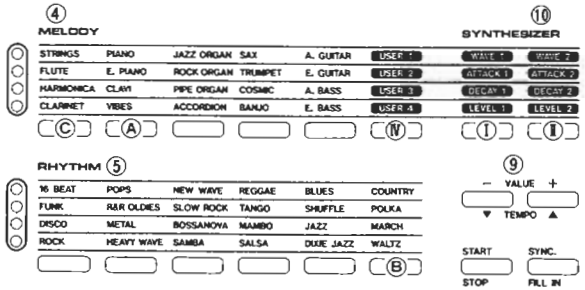
TOP NOTE DUAL 400 VARIATIONS

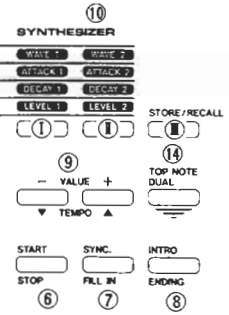
16bit PCM STEREO

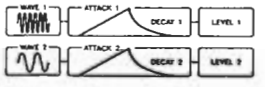
⟨MS710⟩






④ MELODY
STRINGS PIANO JAZZ ORGAN SAX A. GUITAR USER 1
FLUTE E. PIANO ROCK ORGAN TRUMPET E. GUITAR USER 2
HARMONICA CLAVI PIPE ORGAN COSMIC A. BASS USER 3
CLARINET VIBES ACCORDION BANJO E. BASS USER 4
Ⓒ Ⓐ Ⓝ
⑤ RHYTHM
16 BEAT POPS NEW WAVE REGGAE BLUES COUNTRY
FUNK R&R OLDIES SLOW ROCK TANGO SHUFFLE POLKA
DISCO METAL BOSSANOVA MAMBO JAZZ MARCH
ROCK HEAVY WAVE SAMBA SALSA DIXIE JAZZ WALTZ
Ⓑ



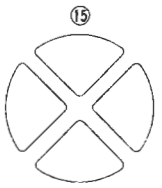


KAWAI
PERSONAL KEYBOARD
MS710

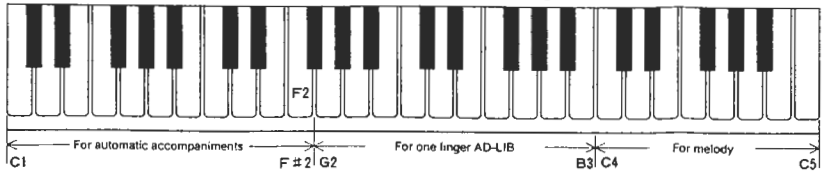
TOP NOTE DUAL 576 VARIATIONS

STEREO MIDI

ONE FINGER AD-LIB TM 16bit PCM



SOUND SELECTABLE PADS



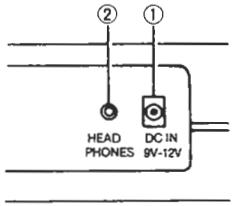
REAR VIEW

①DC IN
This jack accepts the plug from the optional AC adapter (PS-121, 123 or PS-092 (only in U.S.)).

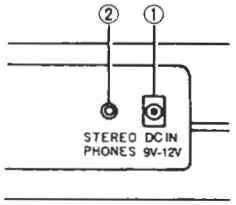
②STEREO PHONES (Model MS710/510)/HEADPHONES (MS210)
This jack accepts the mini plug from a pair of stereo headphones or a cable/adaptor for connecting the instrument to another piece of audio equipment. (For the latter procedure, see overleaf.) Plugging anything into this jack automatically disables the instrument's built-in speakers.

③MIDI IN/OUT (Model MS710)
These jacks accept standard MIDI cables (available separately) for connecting your keyboard to a personal computer, sequencer, or other MIDI equipped instrument. (For further details, see overleaf.)

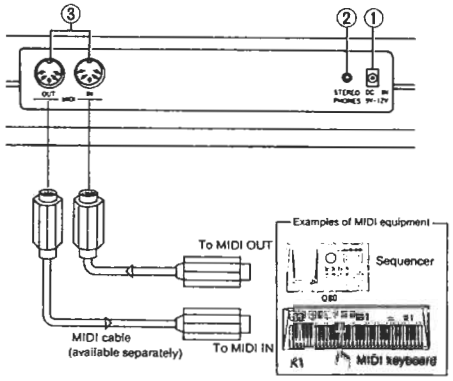
⟨MS210⟩



⟨MS510⟩



⟨MS710⟩



2. Operation (All Models)

■ LOWER MODE SELECT

The LOWER MODE SELECT switch assigns a different function to the lower region of the keyboard for each of its three positions

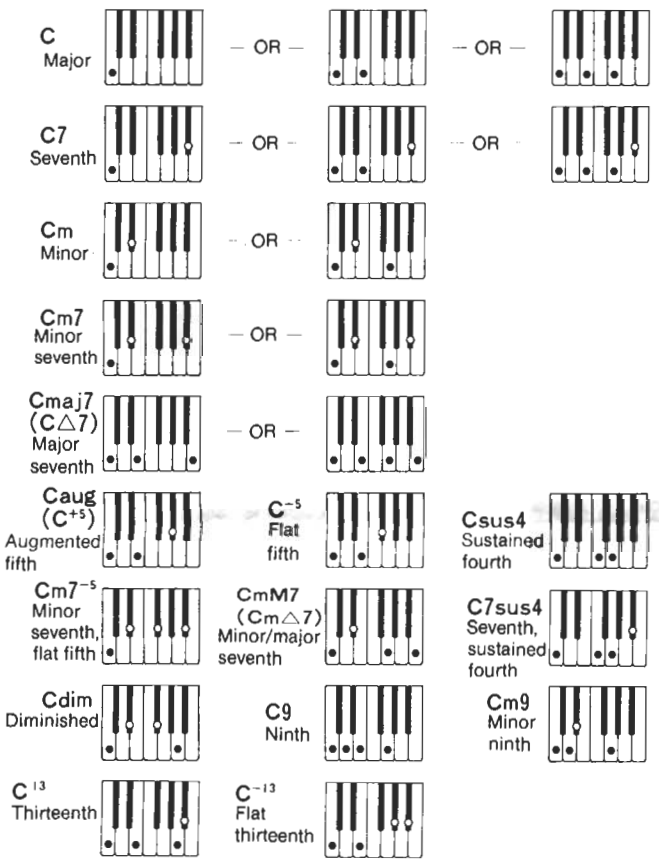
OFF The entire keyboard becomes a melody keyboard.

AUTO When selected, the automatic accompaniments are controlled by the chord you play on the lower region of the keyboard. (It is not always necessary to play the complete chord. See samples below.)

DRUM The lower region of the keyboard functions as a percussion section, with a different percussion instrument assigned to each key. (See the MIDI key number chart for the assignments.)

■ Chord Samples (Root = C)

Abbreviation possible.



■ ONE FINGER AD-LIB KEYS

Turning the ONE-FINGER AD-LIB switch ⑫ on causes each key in this region of the keyboard to produce a different "ad-lib" phrase. Turning the switch off returns the keys to standard "melody only" operation.

■ MELODY KEYS (Models MS510 and MS710 only)

This part of the keyboard is used for playing the melody with the tone selected by TONE SELECT ④ switches. The user is able to alternate freely between normal melody operation and ONE FINGER AD-LIB operation.

■ ONE FINGER AD-LIB

The Kawai MS Series ONE FINGER AD-LIB function does for melody what the auto-accompaniment does for chord accompaniment. Try the following:

(1) Set the LOWER MODE SELECT ③ switch to its OFF position.

(2) Press the ONE FINGER AD-LIB ⑫ switch to light the indicator.

(3) Press and hold down various keys on the ONE FINGER AD-LIB region of the keyboard to hear the variety of ad-lib phrases that they produce.

(4) Set the LOWER MODE SELECT ③ switch to its AUTO position.

(5) Press the START/STOP ⑥ switch to start the rhythm and automatic accompaniment. (See Note.)

(6) Press various keys in the ONE FINGER AD-LIB region to see how the ad-lib phrases automatically vary with the chords of the automatic accompaniment. Pressing different tone select switches will change the melody tones you hear in both the ad-lib and normal regions.

(7) Press a RHYTHM SELECT ⑤ switch to change the rhythm pattern, the chords of the automatic accompaniment, and the ad-lib phrases produced by each of the keys in the ONE FINGER AD-LIB region of the keyboard.

Note

When the ONE FINGER AD-LIB function is initially activated, the auto-accompaniment will play and repeat a preset chord progression. To override the preset progression and control the auto-accompaniment yourself, simply play any chord on the lower section of the keyboard. (It is not always necessary to play the complete chord. See sample chord chart.) The ad-lib patterns will automatically change to match new chords that you select.

3. Additional Features (MS710 only)

■ RECORDER

The Model MS710 has a built-in recorder for recording and playing back performance.

• Recording & Playback

(1) Press the REC/STOP ⑰ switch to start both the recorder and the metronome.

(2) Play. Everything you play will be recorded — the automatic accompaniment, ONE FINGER AD-LIB phrases normal melody, hand-played chords, and hand percussion.

(3) Press the REC/STOP ⑰ switch again to stop recording.

(4) Press the PLAY/STOP ⑱ switch to play back the recording.

Note: This recording remains in memory even after the POWER switch ① is turned off — as long as the instrument receives power from batteries or the AC adaptor.

• Erasing

When you make a new record, you have to erase contents which recorder contains.

(1) Simultaneously press the REC/STOP ⑰ PLAY/STOP ⑱ switches to erase the recording.

■ SYNTHESIZER

The Model MS710 has a built-in synthesizer for creating 4 user-defined tones to complement the 20 preset tones programmed at the factory.

• Basic Procedure

(1) Press either the SYNTH Ⅰ or SYNTH Ⅱ switch to activate the synthesizer and de-activate the tempo indicator. These tempo switches are now used to select synthesizer waves or values.

(2) Use the SYNTH Ⅰ and SYNTH Ⅱ switches to shift the LED indicator to the row containing the parameter to be changed. (See the list of parameters below.)

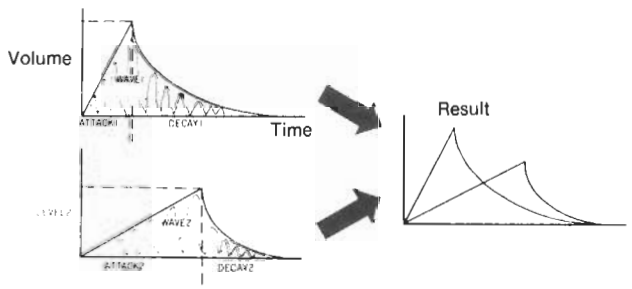
(3) Use the TEMPO ⑨ switches to change the value of the parameter you have selected. (See Note 3.) You will hear the character of the tone change each time you change a parameter value.

(4) Repeat Steps 2 and 3 as often as desired.

(5) Once you have created a tone that you would like to store for later use, select a memory location with the USER Ⅳ switch. Press the USER Ⅳ switch to shift the LED indicator and select one of the user memories. (1-4).

(6) Press the STORE/RECALL Ⅲ switch to store the tone and return to regular keyboard operation.

* When you store a new synthesized tone on a user memory, any previously stored tone on that memory location will be erased.



• Synthesizer Parameters

A user-defined tone is made up of two waveforms. Each waveform has four parameters which can be changed by the user. Each of these controllable parameter is described below. (See Note 1.)

WAVE This parameter determines the overall shape of the waveform. There are 32 possible shapes for WAVE 1 (See chart below.) and 3 for WAVE 2. Each shape has a different tonal character.

ATTACK This parameter determines how long the waveform takes to reach its peak. The user can select from 16 different attack times — ranging from slow ① to fast ⑯.

DECAY This parameter determines how long the waveform takes to die out after reaching its peak. The user can select from 16 different decay times —ranging from slow ① to fast ⑯. An organ-like tone, for example, has a long decay time because an organ key continues to sound as long as it is pressed.

LEVEL This parameter determines the size of the peak or the maximum volume level of the wave. You have a choice of 16 levels — ranging from soft ① to loud ⑯.

TEMPO key	− VALUE + ▼ TEMPO ▲	
WAVE1	Used to select a desired waveform from 32 possible shapes. (See the table below.)	
WAVE2	Used to arrange the waveform selected by the WAVE1. (Three variations are available for a waveform selected by the WAVE1.)	
ATTACK	Slow Attack	Fast Attack
DECAY	Slow Decay	Fast Decay
LEVEL	Low Level	High Level

• WAVE 1 Waveforms

1	Strings	12	Accordion	23	Bass drum
2	Flute	13	Sax/acoustic bass	24	Snare drum
3	Harmonica	14	Trumpet/electric bass	25	Rim shot
4	Clarinet/flute	15	Cosmic	26	Tom-tom
5	Piano	16	Banjo	27	High hat (open)
6	Electric piano/accordion	17	Acoustic guitar/cosmic	28	Cymbal crash
7	Clavis	18	Electric guitar	29	Handclap
8	Vibes	19	Acoustic bass	30	Ride cymbal
9	Jazz organ/rock organ	20	Electric bass	31	Conga/high hat (closed)
10	Rock organ	21	Draw bar organ	32	Omnibus loop
11	Pipe organ	22	Oriental bell		

Notes:

1. The release time, the time that the sound takes to die out after the key is released, is determined by the tone in effect when the synthesizer function is activated. For example, if you were playing strings tone before activating the synthesizer function, the release time would be very long since strings die out slowly after the key is released. Be sure to switch the instrument to a tone with the desired release time, before pressing the SYNTH Ⅰ or SYNTH Ⅱ switch.
2. Pressing any switch other than the TEMPO ⑨, SYNTH Ⅰ, SYNTH Ⅱ, STORE/RECALL Ⅲ, or USER Ⅳ switches returns the instrument to regular keyboard operation. If you leave the synthesizer function by accident, press the STORE/RECALL Ⅲ switch to undo such a mistake.
3. Simultaneously pressing both TEMPO ⑨ switches resets the current parameter to its default value. (See chart.)

	WAVE 1	WAVE 2
	Strings	Default for WAVE 1
ATTACK	8	8
DECAY	8	8
LEVEL	8	8

• Erasing User-Defined Tones

Holding down the first two keys on the keyboard while turning on the power both erases the recorder and synthesizer contents and resets the user-defined tones to their factory preset state.

These parameters settings remain in memory even after the POWER switch ① is turned off — as long as the instrument receives power from batteries or the AC adaptor.

4. SYSTEM Function

The SYSTEM mode provides the capability for transposing the instrument pitch in semitone steps, fine-tuning the pitch to match other instruments, and (MS710 only) changing the MIDI transmit channel.

• General Procedure

(1) Make sure that the rhythm, automatic accompaniment, ONE FINGER AD-LIB, and recorder are all off.

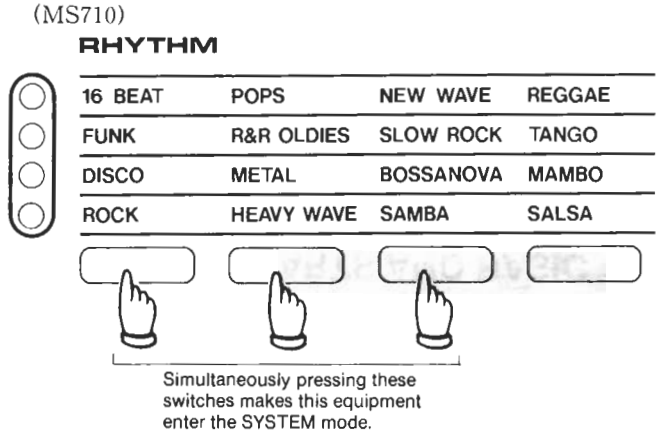
(2) Simultaneously press the first three RHYTHM SELECT ⑤ switches on the left.
Note: On Models MS510 and MS710, the LEDs next to these switches then light in turn.

(3) Select the desired system function.

TRANSPOSE:	SYNCHRO/FILL IN ⑦
TUNE:	START/STOP ⑥
MIDI TRANSMIT:	TONE SELECT ④

(4) To return to regular keyboard operation, press any key other than the ones used by the selected function.

(MS710)



Simultaneously pressing these switches makes this equipment enter the SYSTEM mode.

■ TRANSPOSE

(1) Press the SYNCHRO/FILL IN ⑦ switch.

(2) Use the TEMPO ⑨ switches to change the pitch: pressing the left switch (-) lowers the pitch a semitone; pressing the right one raises it a semitone.

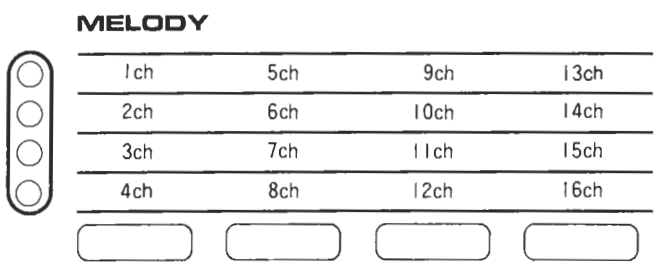
■ TUNE

(1) Press the START/STOP ⑥ switch.

(2) Use the TEMPO ⑨ switches to change the pitch: pressing the left switch (-) lowers the pitch; pressing the right one raises it.

■ MIDI TRANSMIT (Model MS710 only)

(1) Press one of the four leftmost TONE SELECT ④ switches to set the MIDI transmit channel. (See illustration.)



MIDI Implementation (Model MS710 only)

When connected to a sequencer, personal computer, or other MIDI equipped device, the MS710 supports the following MIDI features:

■ Transmitting

The MS710 transmits the following MIDI data on a single MIDI channel (which may be changed with a SYSTEM function):

- Key ON/OFF (which key and how long)
- Program (tone) change
- Pitch bend
- Clock
- Vibrato ON/OFF
- Chorus ON/OFF

■ Receiving

The instrument responds to different types of MIDI data on the following fixed channels:

Channel	Part	MIDI data
1	Melody	KEY ON/OFF, VELOCITY, PROGRAM CHANGE, PITCH BENDER, VIBRATO ON/OFF, SUSTAIN PEDAL
2	Melody	KEY ON/OFF, VELOCITY, PROGRAM CHANGE, PITCH BENDER, SUSTAIN PEDAL
3/4	Melody	KEY ON/OFF, VELOCITY, PROGRAM CHANGE, SUSTAIN PEDAL
16	Drums	KEY ON/OFF, VELOCITY

• Program Number Assignments

1	Strings	9	Jazz organ	17	Acoustic guitar
2	Flute	10	Rock organ	18	Electric guitar
3	Harmonica	11	Pipe organ	19	Acoustic bass
4	Clarinet	12	Accordion	20	Electric bass
5	Piano	13	Sax	21	User 1
6	Electric piano	14	Trumpet	22	User 2
7	Clavis	15	Cosmic	23	User 3
8	vibes	16	Banjo	24	User 4

• Percussion Key Number Assignments

36	Synthesizer percussion 1	46	High hat open
37	Synthesizer percussion 2	47	Mid tom-tom
38	Synthesizer percussion 3	48	High tom-tom
39	Synthesizer percussion 4	49	Crash cymbal
40	Bass drum	50	Low claps
41	Low snare	51	Ride cymbal
42	Rim shot	52	High claps
43	High snare	53	Low conga
44	High hat closed	54	High conga
45	Low tom-tom		

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PERSONAL KEYBOARD MODEL MS710 MIDI IMPLEMENTATION

Date: Apr. 1989
Version: 1.0

Function ...		Transmistted	Recognized	Remarks
Basic Channel	Default	1	1—4, 16	Recognized on multiple channels (CH 1-4, 16).
	Changed	○ 1—16	×	
Mode	Default	—	3	
	Messages	×	×	
	Altered	**********		
Note Number	: True voice	36 — 84 **********	30 — 102 24 — 108	Channels 5-15 ignored.
Velocity	Note ON	× 9n V = 127	○ 9n V = 0 — 127	Channels 5-15 ignored.
	Note OFF	× 9n V = 0	× 9n V = 0, 8n V = ××	×× ignored.
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		○	○	Channel 1, 2 recognized individually. Channels 3-16 ignored.
Control Change	1	○	○	* VIBRATO
	64	×	○	** SUSTAIN PEDAL
	93	○	×	CHORUS ON/OFF
Prog Change	: True #	○ 1 — 24 **********	○ CH1 — 4, 1 — 24	CH1-4: 25- recognized as 1***
System Exclusive		×	×	
System Common	: Song Pos	×	×	
	: Song Sel	×	×	
	: Tune	×	×	
System Real Time	: Clock	○	×	Does not transmit CONTINUE.
	: Commands	○	×	
Aux Messages	: Local ON/OFF	×	×	
	: All Notes OFF	×	×	
	: Active Sense	×	○	
	: Reset	×	×	

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO ○ : Y
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO × : N

* recognized only on channel 1
** recognized on channel 1-4
*** ignored on channel 16